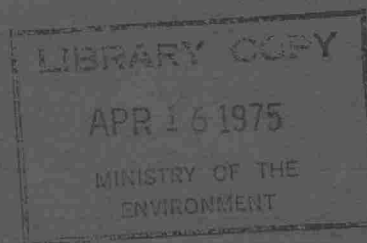


OPERATING SUMMARY



**SOUTHAMPTON**

WATER TREATMENT PLANT

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3

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Ontario

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REGIONAL OPERATIONS DIVISION

DIRECTOR, SOUTHWESTERN REGION  
D. McTavish

MANAGER, UTILITY OPERATIONS  
A. Ladbrooke

SOUTHAMPTON  
WATER TREATMENT PLANT

operated for  
THE TOWN OF SOUTHAMPTON

by the  
MINISTRY OF THE ENVIRONMENT

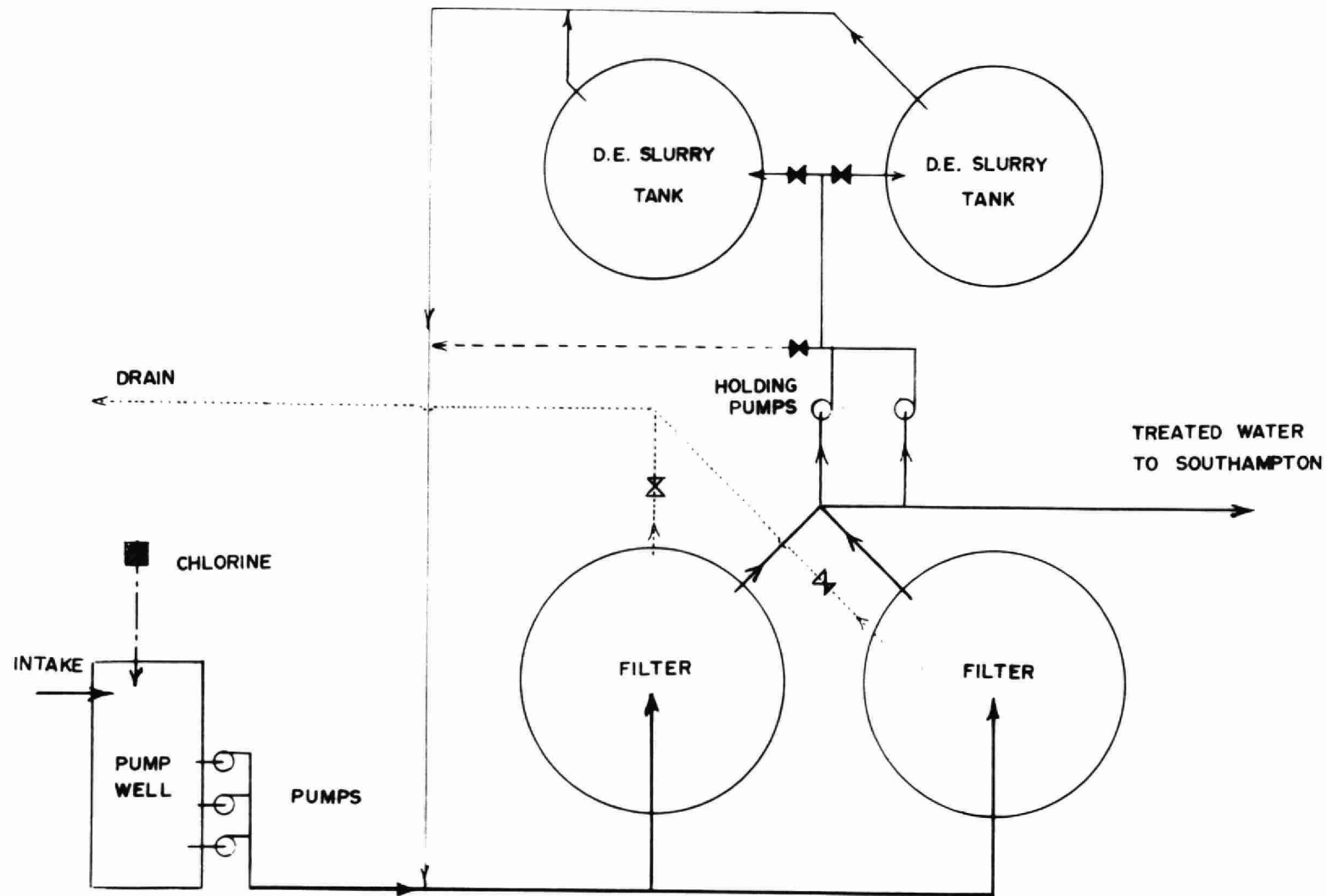
1973 ANNUAL OPERATING SUMMARY

prepared by  
Plant Performance Unit  
TECHNICAL SERVICES BRANCH  
T. Cross, Director

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# TOWN OF SOUTHAMPTON WTP



## DESIGN DATA

PROJECT Town of Southampton WTP NOMINAL CAPACITY

PROJECT NO. 6-0124-63 1.00 mgd

RAW WATER SOURCE

Lake Huron

INTAKE

Depth at crib: 15 ft

Pipe Size: 1100 ft of 24 in dia

CAPACITIES OF UNITS

Pumps: #1 700 igpm or 1.00 mgd

#2 700 igpm or 1.00 mgd

Standby 2100 igpm or 3.0 mgd

Filters: 2 x 350 = 700 igpm or 1.00 mgd

FILTRATION

Type: Bowser, pressure diatomaceous  
earth filter

Size: Two filters rated at 350 gpm each  
(1.75 gpm/ft<sup>2</sup>)

Surface: 400 ft<sup>2</sup> (total)

CHLORINATION

One Fischer & Porter gas chlorinator,  
50 lb/day

STORAGE

Elevated Tank 100,000 gal (owned by  
Town); useable volume 30,000 gal

# ANNUAL COSTS

## 1973 OPERATING COSTS

- SALARIES & WAGES
- EMPLOYEE BENEFITS
- TRANSPORTATION & COMMUNICATIONS
- SERVICES
- SUPPLIES & EQUIPMENT
- ACQUISITION/CONSTRUCTION OF PHYSICAL ASSETS
- TRANSFER PAYMENTS
- OTHER TRANSACTIONS

89%

10%

### YEARLY OPERATING COSTS

YEAR	WATER TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS
			cents per 1000 gal
1968	101	\$ 16,779	17
1969	102	15,805	16
1970	123	17,907	15
1971	131	20,338	16
1972	150*	15,516	10
1973	133	11,222	8

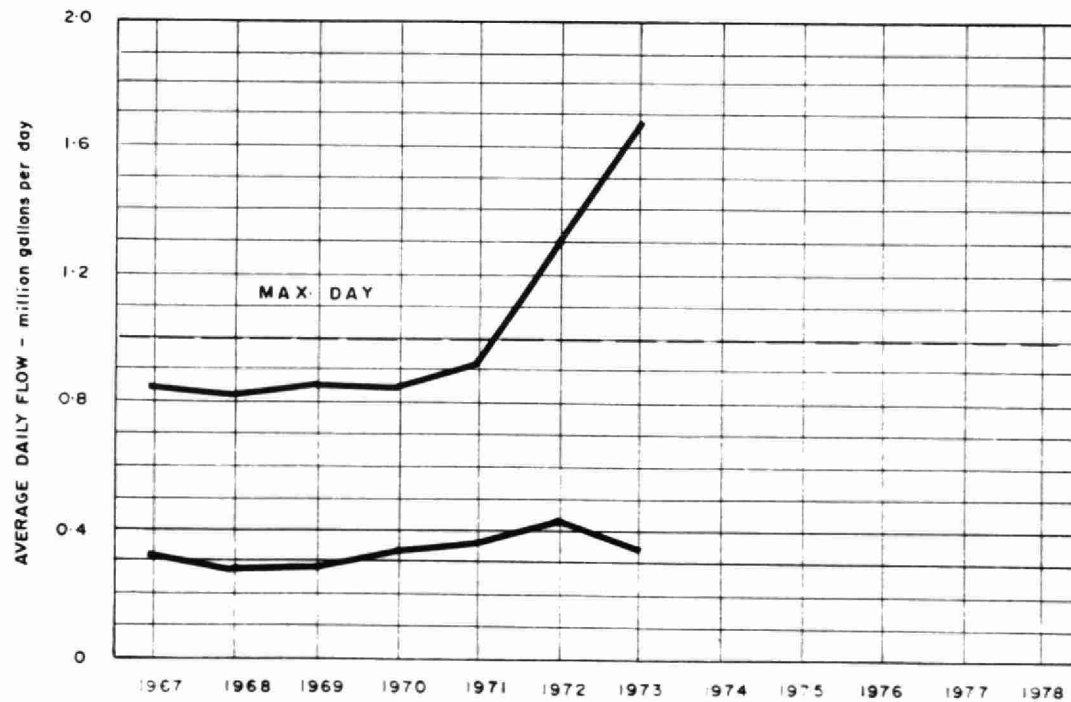
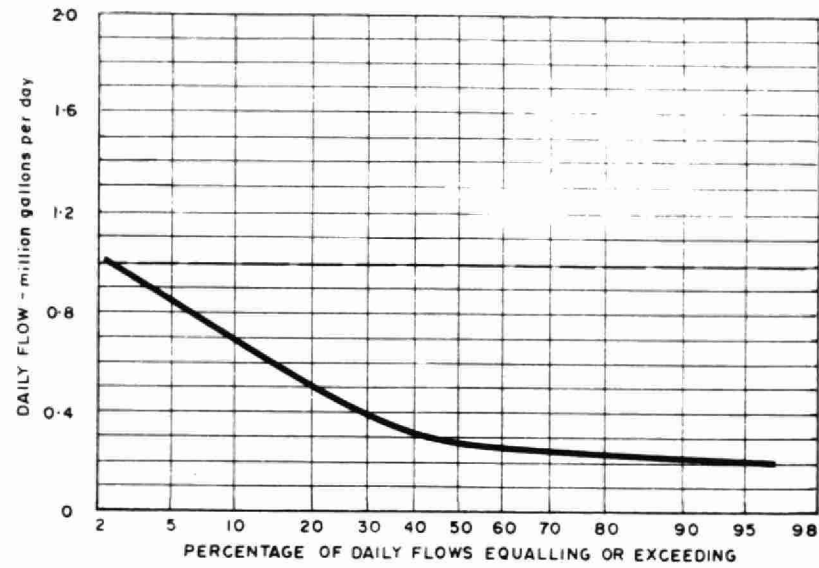
\* Estimated

## OPERATING EXPENDITURES

SALARIES AND WAGES	<u>0</u>
EMPLOYEE BENEFITS	<u>0</u>
TRANSPORTATION & COMMUNICATIONS	<u>50</u>
SERVICES	<u>9,994</u>
SUPPLIES AND EQUIPMENT	<u>1,178</u>
ACQUISITION/CONSTRUCTION OF PHYSICAL ASSETS	<u>0</u>
TRANSFER PAYMENTS	<u>0</u>
OTHER TRANSACTIONS	<u>0</u>
TOTAL	<u>\$11,222</u>



# PROCESS DATA FLOWS



## PLANT PERFORMANCE

MONTH	FLOWS			RAW WATER		TREATED WATER		FILTER OPERATION			
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	TURBIDITY (AVERAGE)	COLOUR (AVERAGE)	TURBIDITY (AVERAGE)	COLOUR (AVERAGE)	NUMBER OF DAYS USED	BACKWASH FREQUENCY	DIATOMACEOUS EARTH	
				FTU	App. units	FTU	App. Units			AMOUNT USED 10 <sup>3</sup> pounds	DOSE mg/l
JAN	8.7	0.28	0.50	7.1				31		13.7	157.7
FEB	7.3	0.26	0.37	4.0				18		4.9	67.2
MAR	8.4	0.27	0.36	2.1				12		3.8	45.0
APR	8.2	0.27	0.58	1.6				27		5.6	68.3
MAY	9.4	0.30	0.64	0.9							
JUNE	12.4	0.41	0.78	0.4	< 5	1.0	< 5				
JULY	24.6	0.79	1.68	0.4							
AUG	16.8	0.54	0.94	0.6	< 5	2.2	< 5	5		1.4	8.0
SEPT	13.9	0.46	1.00	1.3	15	1.2	< 5	4		0.8	5.4
OCT	8.8	0.28	0.55	0.5							
NOV	7.4	0.25	0.46	1.3							
DEC	7.2	0.23	0.63	1.6				10		1.6	21.5
TOTAL	133.1			AVERAGE 1.8	AVERAGE < 8	AVERAGE 1.5	AVERAGE < 5	107		31.6	
AVG.	11.1	0.36	MAXIMUM 1.68	MAXIMUM 5.8	MAXIMUM 15	MAXIMUM 2.2	MAXIMUM < 5			4.5	23.8

## CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	DOSAGE		RESIDUAL IN PLANT EFFLUENT mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						PRE - mg/l	POST - mg/l	
JAN	1	1	1	1	0	0	0	11	0	127	1.5		0.5
FEB	3	0	0	1	0	0	0	12	0	107	1.5		0.5
MAR	0	1	0	0	0	0	0	2	0	112	1.3		0.5
APR	2	1	0	0	0	0	0	7	0	110	1.4		0.5
MAY	0	0	0	0	0	0	0	3	0	109	1.2		0.5
JUNE	1	0	0	1	0	0	0	17	0	119	1.0		0.5
JULY	1	1	1	1	0	0	0	8	0	222	1.0		0.5
AUG	2	0	1	0	0	0	0	8	0	148	0.9		0.5
SEPT	2	0	1	0	0	0	0	8	2	133	1.0		0.5
OCT	2	1	0	0	0	0	0	8	0	90	1.0		0.6
NOV	3	0	0	0	0	0	0	9	0	77	1.0		0.5
DEC	1	0	1	0	0	0	0	7	0	105	1.4		0.5
TOTAL	18	5	5	4	0	0	0	100	2	1459			
AVG.	3 (NOTE - Average shown is the GEOMETRIC MEAN)									4 pounds per day	1.1		0.5

## WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as $\text{CaCO}_3$	3	72	112	98	3	110	120	98	80 - 100
ALKALINITY in mg/l as $\text{CaCO}_3$	3	83	85	80	3	84	90	79	30 - 100
IRON in mg/l Fe	3	0.7	1.6	0.25	3	<0.10	0.2	<0.05	Less than 0.3
CHLORIDE in mg/l $\text{Cl}^-$	3	7	8	7	3	8	9	8	Less than 250
pH in pH units	3	7.7	7.8	7.6	3	7.9	8.2	7.7	7.0 - 8.5

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